## STATE OF HAWAII DEPARTMENT OF HAWAIIAN HOME LANDS

Land Development Division

July 2	7, 2010
Date	
ADDENDUM TO REQUEST FOR I	
IFB-010-H Sewer Connection to Humuna St	HL-013
Notice to All Prosp	pective Bidders
This addendum is hereby made a part of the contra Humuna Street at Kumuhau Subdivision, IFB-010- documents as detailed within this Addendum documents	-HHL-013, and it shall amend the said contract
APPROVED:	
Kaulana H. R. Park, Chairman Hawaiian Homes Commission	
Please execute and immediately return the receipt be Lands via facsimile to (808) 620-9299, Mr. Stewar	
Receipt of Addendum No for the Sewer Conne Subdivision Invitation for Bids (IFB-010-HHL-013	
Signed: (Name)	Title
Name of Firm/Company	Date

# Addendum No. 2 IFB-10-HHL-013 Sewer Connection to Humuna Place at Kumuhau Subdivision July 27, 2010

#### **Inclusions**

The items included in this Addendum are as follows:

- 1. Addendum Cover
- 2. Inclusions
- 3. Copy of the Pre-Bid Conference Agenda (July 20, 2010)
- 4. Questions/Responses/Discussion Items
- 5. Revised Proposal Form (IFB-10-HHL-013)
- 6. Revised plans (Sheet 15)

### Department of Hawaiian Home Lands IFB-10-HHL-013

#### Sewer Connection to Humuna Place at Kumuhau Subdivision

PRE-BID CONFERENCE July 20, 2010 1:00 p.m.

Site Visit to Follow

Hawaii Conference Room Hale Kalanianaole 91-5420 Kapolei Parkway Kapolei, Hawaii 96707

#### **AGENDA**

- 1. Attendance Sheet sign-in
- 2. Introduction of DHHL Staff and Engineering Consultant
- 3. Purpose of Pre-Bid Conference
  - To provide potential bidders with a project overview and job-site visit
  - To review procurement requirements and allow potential bidders to ask questions and obtain clarification on the bid documents. A written summary of the conference will be issued as an addendum on the DHHL Web Site.
  - Requests for clarification or any questions after this meeting shall be made in writing and faxed to 620-9299, no later than 4:30 pm, July 27, 2010; written response to requests will be issued via addendum on the DHHL Web Site, no later than 4:30 pm, July 30, 2010.

#### 4. Procurement reminders

- Requests for SPO-38, Hawaii Product Preference not listed on State Procurement Web Site due July 21, 2010.
- Notice of Intention to Bid is due no later than 2:00 pm, July 30, 2010, Fax Notice of Intention to Bid form to 620-9299.
- SPO-21, Standard Qualification Questionnaire required by 2:00 pm August 5, 2010, if none filed within last two years of this bid opening. If Contractor is unsure, call Kehau Quartero to check if valid SPO-21 is on DHHL file.
- Bids are due by 2:00 p.m. (according to DHHL's time clock), Monday, August 9, 2010 at DHHL's 1st Floor Reception Desk, Hale Kalanianaole, 91-5420 Kapolei Parkway, Kapolei, HI 96707.
- Bids will be opened shortly thereafter in a conference room to be determined.
- Bids submitted after 2:00 p.m. on August 9, 2010 will not be opened and will be returned.
- Award of contract will be made to the lowest responsible and responsive "Total Sum Bid", which
  includes Sewer Work, Road Work and Contingency.
- Reminder to include other items in Bid Envelope, per IFB requirements, identified as "Contractor's Submittal, such as Bid Package Envelope Cover, Offer Form, Bid Bond, Tax Clearance, and Notices of Compliance.

IFB-10-HHL-013 Sewer Connection to Humuna Place at Kumuhau Subdivision Pre-Bid Conference Agenda Page 2

#### 5. Project

- This project consists of connecting two existing gravity sewerlines a distance of approximately 175 feet. This project will require trenching into existing pavement and curbing, excavation, installation of sewerlines, manhole and other appurtenances, and fencing and paving.
- Contractor, as agent for the Department of Hawaiian Home Lands shall be provided with a right of entry on to the Hawaii Public Housing Authority land.
- Project is subject to attached Labor Compliance requirements.

#### 6. Questions/Answers

- Written answers to questions will be provided to all plan holders via addendum on the DHHL Web Site; any verbal responses by the Department and Consultant shall not be binding.
- Interested bidders are responsible to check the DHHL Web Site for issuance of any addenda.
- 7. Site Visit through Kumuhau Subdivision and Hawaii Public Housing Authority property at Humuna Place to follow Pre-Bid Conference at approximately 3 pm.

## Addendum No. 2 IFB-10\_HHL-013 Sewer Connection to Humuna Street for Kumuhau Subdivision

July 27, 2010

#### **Questions & Responses**

Question #1: Will directional drilling be allowed?

<u>DHHL Response</u>: Directional drilling is not an approved method under the current

permit. DHHL may not have sufficient time to amend the permit to

allow directional drilling.

Question #2: Will PVC piping be allowed?

<u>DHHL Response</u>: The project in its entirety has already been approved by the City and

County of Honolulu (County) without the use of PVC. It is our understanding that the County does not like mixing piping material.

Question #3: Are root barriers required around the sewer line joints?

Consultant's

Response: No. They are not specified in the plans.

#### **Discussion Items**

- 1. The plans included in the IFB are not to scale. DHHL's Engineering consultant, Akinaka & Associates can provide scaled plans in needed.
- 2. The 'Road Work' specified in the plans is located at the end of Road "A" (Kumuniu Street), which includes, but is not limited to grassing, fencing and graveling.
- 3. The restoration of grassing, chain link fence and road area was stated as being incidental to the bid offer during the Pre-Bid Conference. However, said work is included as a Lump Sum line-item noted in the revised proposal form provided as part of this Addendum No. 2.
- 4. The existing manhole newly installed near the fence has a plug. Contractor shall remove the plug and connect to the Humuna Place manhole that is a gravity line. The Humuna Place manhole is dry.
- 5. Contractor must coordinate its entry into the Kumuhau subdivision with Armstrong Builders, LLC, who are constructing the houses in the project.
- 6. Contractor shall discuss with Mr. Jeffrey Fujimoto (# 620-9274) of DHHL the location of its designated staging area. Contractor shall be responsible to restore the staging area to its original condition.
- 7. The scheduled time of performance for the work is sixty (60) calendar days from the issuance of 'Notice to Proceed', subject to contract award, contract execution, and contract certification.

Addendum No. 2; IFB-10-HHL-013 July 27, 2010 Page 2 of 2

#### Other:

- 1. Bidders are advised to use the forms in the IFB, particularly the "Notice of Intent to Bid" form.
- 2. Questions regarding the status of a Bidders 'Standard Qualification Questionnaire' should be directed to Stewart Matsunaga, at #620-9283.
- 3. Ensure that all required information and signatures are on bid bonds.
- 4. Be sure to check DHHL website on a regular basis for addendums up until the time of bid opening.

## STATE OF HAWAII DEPARTMENT OF HAWAIIAN HOME LANDS

#### PROPOSAL FOR

#### SEWER CONNECTION TO HUMUNA PLACE

#### AT KUMUHAU SUBDIVISION

#### WAIMANALO, ISLAND OF OAHU, HAWAII

TAX MAP KEY
(1) 4-4-08:11 (PORTION)

**IFB No.: IFB-10-HHL-013** 

	, Hawaii , 2010
Mr. Kaulana H. R. Park, Chairman Hawaiian Homes Commission Department of Hawaiian Home Lands State of Hawaii	
Dear Mr. Park:	
The undersigned, having examined to full satisfaction, all the bidding limited to the plans, and specifications for the captioned project, submound prices and total sum bid of	nits hereby its unit and/or lump
Dollars (\$) General Excise Tax, for supplying, furnishing and paying for all mat and other incidental work necessary to construct in place and comp items listed in the following schedule.	terials, tools, labor, equipment

## SEWER CONNECTION TO HUMUNA PLACE AT KUMUHAU SUBDIVISION

Item	Estimated		Unit	
No.	Quantity	Description	Price	Total
		I. SEWER SYSTEM		
		The prices bid herein for the following items shall include furnishing all labor, equipment, tools materials and all incidental work necessary to construct the sewer system in place complete, including excavating for pipes and manholes, crushed rock cradle, rungs, frame and cover for manholes, sheeting and shoring as required, backfilling, all in accordance with the plans and specifications.		
1	80	Cu. Yds., Unclassified excavation for sewer lines, cradles and manholes, including backfill and manhole seals.		
		Per Cu. Yds.	\$	\$
2	167	Lin. Ft., 8" Vitrified clay pipe		
		Per Lin. Ft.	\$	\$
3	25	Lin. Ft., 6" Vitrified clay pipe for reconnection of sewer lateral		
		Per Lin. Ft.	\$	\$
3	1	Each, 8" x 6" Vitrified clay sewer pipe wye.		
		Per Each	\$	\$
4	27	Lin. Ft., Crushed rock cradle for 8" sewer pipe.		
		Per Lin. Ft.	\$	\$
5	1	Each, Reinforced concrete manhole base		
		Per Each	\$	\$

Sewer Connection to Humuna Place Kumuhau Subdivision

6	1	Each, C.I. manhole frame and cover	
		Per Each	\$ _ \$
7	1	Each, Standard plain manhole, 6' - 6.99'	
		Per Each	\$ \$
8	L.S.	Remove plug at existing sewer manhole "C5" Connect new 8" sewer to SMH, including channelizing the SMH invert.	
		Lump Sum	\$ _ \$
9	L.S.	Relocate existing water meter box, reconnect to existing water lateral	
		Lump Sum	\$ \$
10	2	Each, Remove existing 6" lateral including existing wye and plug end with class "C" concrete	
		Per Each	\$ _ \$
11	L.S.	Connect new 8" sewer to exisitng SMH, including rechannelizing of SMH invert (Humuna Place)	
		Lump Sum	\$ _ \$
12	4	Lin.Ft., Repair Existing Rolled Curb	
		Per Linear Foot	\$ _ \$
13	23	Sq. Yds., Repave trench with A.C. pavement, base course and select subbase course to match existing pavement.	
		Per Sq. Yd.	\$ \$

14	L.S.	Restoration of existing improvements (including but not limited to lawn/grassing, concrete cut-off ditch, chain link fence and dust fence	
		Lump Sum	\$ \$
		SUB-TOTAL FOR SEWER SYSTEM (Items 1 to 14 inclusive)	\$
		II. ROAD WORK	
		The prices bid herein for the following items shall include furnishing all labor, equipment, tools materials and all incidental work necessary to construct the road work in place complete, all in accordance with the plans and specifications.	
1	59	Lin. Ft., 4' high Chain Link Fence per DPW Std. Detail R-18	
		Per Linear Foot	\$ \$
2	1	Each, 4' high x 15' wide Chain Link Double Swing Gate per DPW Std. Detail R-21A	
		Per Each	\$ \$
3	L.S.	Connect Chain Link Fabric to Existing Fence Post	
		Lump Sum	\$ \$
		SUB-TOTAL FOR ROAD WORK (Items 1 to 3 inclusive)	\$
		III. Contingency (10% of Sub-total for Sewer System Items 1-14 + Subtotal of Road Work Items 1-3)	\$

RECAPITULATION		
	WORK ITEM	SUBTOTAL
1.	SEWER WORK	\$
II.	ROAD WORK	\$
III.	CONTINGENCY	\$
	TOTAL SUM BID (INSERT THIS \$ AMT. TO PROPOSAL PAGE 1)	<b>\$</b>

The prices herein for the above items shall include all materials, labor, tools, equipment, machinery and all incidentals necessary, including excavation and backfill, exclusive of general excise tax to install or to construct these items in place complete and in accordance with the plans and specifications contained in this IFB.

#### **PREFERENCE**

The following conditions shall be complied with:

- 1. Recycled Product Preference shall not apply to this proposal.
- 2. It is further understood by the Bidder that if upon being granted Hawaii Products or Recycled Products Preference, and being awarded the contract, if the Bidder fails to use such products or meet the requirements of such preference, the Bidder shall be subject to penalties, if applicable.

#### **COMPLIANCE WITH ACT 175, HAWAII PRODUCTS PREFERENCE**

Section 103D-1002, Hawaii Revised Statutes (HRS), as amended by Act 175 (Session Laws of Hawaii 2009), provides preference for Hawaii products. The previous Hawaii products list established pursuant to HRS \$103D-1002 was suspended effective July 1, 2009, and a new list has been published by the State Procurement Office (SPO) at http://www4.hawaii.gov/spoh/HiProducts/hiProducts.htm. DHHL will be supplementing the list with additional approved products for this solicitation.

Pursuant to HRS §103D-1002(b) (2) and Procurement Circular No. 2009-13, bidders intending to use Hawaii products should distribute the attached SPO-38, Certification for Hawaii Product Preference, to each of the manufacturers and producers of such products which bidders intend to use if the manufacturers and producers and their products are not listed on the SPO Hawaii Products List or in the DHHL's list below. The manufacturers and producers must complete and submit SPO-38 to DHHL. The form must be received by DHHL no later than 4:30 p.m., July 8, 2010. Submittal by facsimile (808 620-9299) is acceptable. If DHHL receives and approves SPO-38s relating to this solicitation DHHL will issue an addendum of certified and qualified Hawaii products by 4:30 p.m., July 14, 2010.

Bidders may claim a Hawaii product preference for products that it manufactures or produces with its own workforce and equipment. The SPO-38, *Certification for Hawaii Product Preference*, must be submitted in accordance with the procedures described above in order for Bidder to claim a Hawaii product preference for such Hawaii products Bidder intends to use in this work.

A partial list of approved products is provided below.

Forms SPO-38, *Certification for Hawaii Product Preference* for the following Hawaii products have been received in compliance with the above.

Product	<u>Vendor</u>
Aggregate - Grade A material	Ameron International Corporation
Aggregate - Grade B material	Ameron International Corporation
Aggregate, basalt rock - Grade A	Grace Pacific Corporation
Aggregate, basalt rock - Grade B	Grace Pacific Corporation
Aggregate, recycled asphalt concrete	Grace Pacific Corporation
Aggregate, recycled concrete	Grace Pacific Corporation
Aggregate and sand – Limestone and coral	Delta Construction Corporation
Concrete, ready-mix	Ameron International Corporation
Drain pipe, corrugated metal (aluminum or galvanized)	Hawaii Concrete Products, Inc.
Drain structures, precast concrete	Ramtek Fabrication
Manhole sections, precast concrete	Hawaii Concrete Products, Inc.
Pipe, reinforced concrete	Hawaii Concrete Products, Inc.
Rock, aggregate-sized material	Ameron International Corporation
Sand, manufactured	Ameron International Corporation

Where there are a number of qualifying classes of Hawaii products of a given description, the Bidder must indicate on the schedule which class will be furnished by inserting the class of the particular Hawaii product that will be used. Otherwise, preference will be given based on the class with the lower percentage.

Sewer Connection to Humuna Place Kumuhau Subdivision

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SCHEDULE OF ACCEPTABLE HAWAII PRODUCTS AND DESIGNATION OF HAWAII PRODUCTS TO BE USED			
ACCEPTABLE HAWAII PRODUCTS		HAWAII PRODU Cost FOB Jobsite,	CTS TO BE USED Unloaded Including Excise and Use Taxes
Description	Manufacturer	Base Bid	Additive Alternate
		\$	\$
		\$	\$
		\$	\$
		\$	\$
		\$	\$
		\$	\$
		\$	\$

The Bidder agrees that preference for Hawaii products shall be taken into consideration to determine the low Bidder in accordance with said sections and the rules promulgated; however, the award of contract will be in the amount of the bid offered exclusive of any preferences.

#### **METHOD OF AWARD**

Bidder is required to bid on the entire project. The low bidder shall be determined by the procedures outlined in items 1) through 4) below:

- 1) Prior to opening of bids, the State will determine the amount of funds available for the project. This amount will be designated the "control amount". The control amount shall be announced at, and prior to the opening of bids.
- 2) The Base Bid and Alternate, if any, of each Bidder will be adjusted to reflect the applicable preferences in accordance with Chapter 103D, HRS. The Alternate, if any, will then be added to the Base Bid and compared with the control amount.

- 3) The low bidder shall be the Bidder having the lowest aggregate amount, within the control amount (after application of the various preferences), for the Base Bid plus the Alternate, if any.
- 4) If adding the Alternate, if any, would make the aggregate amount exceed the control amount for all Bidders, the low bidder shall be the Bidder having the lowest Base Bid after application of the various preferences.

It is further understood and agreed that:

- 1) The Chairman reserves the right to reject any and/or all bids and waive any defects when, in his opinion, such rejection or waiver will be in the best interest of the State.
- 2) After determining the low bidder, an award may be made either on the amount of the Base Bid alone, or including the Alternate (exclusive of preferences), if:
  - a. It is in the best interest of the State;
  - b. Funds are available at time of the award; and
  - c. The combination of the Base Bid plus Alternate does not change the apparent low bidder.
- 3) In the event the Base Bid for all Bidders exceed the control amount, the Chairman reserves the right to negotiate with the lowest responsible and responsive bidder to award a contract within available funds.
- 4) In the event the award is made for the Base Bid alone, the Chairman reserves the right to amend the contract at a later date to include the Alternate should funds subsequently become available.

#### **OTHER CONDITIONS**

- 1) The liquidated damages per working day for failure to complete the work on time have been determined and are noted in the Special Conditions.
- 2) By submitting this proposal, the undersigned is declaring that his firm has not been assisted or represented on this matter by an individual who has, in a State capacity, been involved in the subject matter of this contract in the past one (1) year.
- 3) By submitting this proposal, the undersigned is declaring that Bidder's own organization will perform at least 20% of the total contract work.
- 4) Upon the acceptance of the proposal by the Chairman, the undersigned must enter into and execute a contract for the same and furnish a Performance and Payment

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Bond, as required by law. These bonds shall conform to the provisions of Sections 103D-324 and 325, Hawaii Revised Statutes, and any law applicable thereto.

- 5) The quantities given herewith are approximate only and are subject to increase or decrease.
- 6) The estimated quantities shown for items for which a UNIT PRICE is asked in this proposal are only for the purpose of comparing on a uniform basis bids offered for the work under this contract. No claim shall be filed for anticipated profit or loss because of any difference between the quantities of the various classes of work done or the materials and equipment actually installed and the said estimated quantities. Payment on UNIT PRICE items will be made only for the actual number of units incorporated into the finished project at the contract UNIT PRICE.
- 7) If the product of the UNIT PRICE BID and the number of units does not equal the total amount stated by the undersigned in the Proposal for any item, it will be assumed that the error was made in computing the total amount. For the purpose of determining the lowest Bidder, the stated UNIT PRICE alone will be considered as representing the Bidder's intention and the total amount bid on such items shall be considered to be the amount arrived at by multiplying the UNIT PRICE by the number of units.
- 8) Certification for Safety and Health Programs for Bids in Excess of \$100,000. In accordance with Sections 103D-327 and 396-18, Hawaii Revised Statutes, by submitting this proposal, the undersigned certifies that his firm will have a written Safety and Health Plan for this project that will be available and implemented by the Notice to Proceed date of this project. Details of the requirements of this plan may be obtained from the Department of Labor and Industrial Relations, Occupational, Safety and Health Division.
- 9) <u>Anti-Collusion Certification</u>. By submitting this proposal, the undersigned is declaring that the price submitted is independently arrived at without collusion.
- 10) Any contract arising out of this offer is subject to the approval of the Department of the Attorney General as to form, and to all further approvals, including the approval of the Governor, required by statute, regulation, rule, order, or other directive.

Receipt of the following addenda issued by the Department is acknowledged by the date(s) of receipt indicated below:

	Date		Date
Addendum No. 1		Addendum No. 4	
Addendum No. 2		Addendum No. 5	
Addendum No. 3		Addendum No. 6	

It is understood that failure to receive any such addendum shall not relieve the Contractor from any obligation under this IFB as submitted.

## ALL JOINT CONTRACTORS OR SUBCONTRACTORS TO BE ENGAGED ON THIS PROJECT

The Bidder certifies that the following is a complete listing of all joint Contractors or Subcontractors covered under Chapter 444, Hawaii Revised Statutes, who will be engaged by the Bidder on this project to perform the nature and scope of work indicated pursuant to Section 103D-302, Hawaii Revised Statutes, and understands that failure to comply with this requirement shall be just cause for rejection of the bid.

The Bidder further understands that only those joint Contractors or Subcontractors listed shall be allowed to perform work on this project and that all other work necessary shall be performed by the Bidder with his own employees. If no joint Contractor or Subcontractor is listed, it shall be construed that all of the work shall be performed by the Bidder with his own employees.

The Bidders must be sure that they possess and that the Subcontractors listed in the proposal possess all the necessary licenses needed to perform the work for this project. The bidder shall be solely responsible for assuring that all the specialty licenses required to perform the work are covered in his bid.

The Bidder shall include the license number of the joint Contractors or Subcontractors listed below. Failure to provide the correct names and license numbers as registered with the Contractor's Licensing Board may cause rejection of the bid submitted.

Complete Firm Name of Joint Contractor or Subcontractor for Total Sum Bid	License Number	Nature and Scope of Work to be Performed

Sewer Connection to Humuna Place Kumuhau Subdivision

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(Add add	itional sheets if necessary)	
1. 2. 3. 4. 5.	Legal Tender (*2) Cashier's Check (*3) Certificate of Deposit (*3) Certified Check (*3)	) ) ) in the ) amount
6. 7. 8. 9.	Share Certificate (*3) Teller's Check (*3)	) of ) ) cable )
		DOLLARS (\$
as require	d by law.	Respectfully submitted,
		Name of Company, Joint Venture or Partnership
		License No.
		BySignature (*4)
		Title:
		Date:
		Address:

(IF A CORPORATION, AFFIX CORPORATE SEAL TO SIGNATURE, BE SURE TO FILL IN ATTACHED LIST OF SUBCONTRACTORS. THIS PROPOSAL FORM MAY NOT BE ALTERED AND BIDDERS MAY NOT QUALIFY OR CONDITION THEIR BIDS IN ANY WAY.)

Telephone No.:

PLEASE FILL OUT THE ATTACHED CERTIFICATE OF RESOLUTION GIVING EVIDENCE OF THE AUTHORITY OF THIS OFFICER TO SUBMIT BIDS ON BEHALF OF THE COMPANY.

#### NOTES:

- \*1. Surety bond underwritten by a company licensed to issue bonds in this State;
- \*2. Legal tender; or
- \*3. A certificate of deposit; share certificate; or cashier's, treasurer's, teller's, or official check accepted by, and payable on demand to the State by a bank, a savings institution, or credit union insured by the Federal Deposit Insurance Corporation of the National Credit Union Administration.
  - A. These instruments may be utilized only to a maximum of \$100,000.
  - B. If the required security or bond amount totals over \$100,000, more than one instrument not exceeding \$100,000 each and issued by different financial institutions shall be accepted.
- \*4. Please attach to this page evidence of the authority of this officer to submit bids on behalf of the Company, and also the names and residence addresses of all officers of the Company.
- \*5. Fill in all blank spaces with information asked for or bid may be invalidated. PROPOSAL MUST BE INTACT; MISSING PAGES MAY INVALIDATE YOUR BID.

#### **CERTIFICATE OF RESOLUTION**

	I,	, Secretary of		, a
Hawa	I,aii Corporation, do hereby certify	that the followi	ng is a full, true and corre	ect copy of a
resolu	ution duly adopted by the Board of	Directors of said	Corporation, at its meeting d	luly called and
held a	at the office of the Corporation		, Hawaii, on	day of
said re	resolution has not been modified, ar	vhich a quorum w nended or rescind	as present and acting throug ed and continues in full forc	thout; and that e and effect.
	"RESOLVED that any individence President, be, and each of them hany bid, proposal or contract for the services to be performed by such bid, proposal or contract with City and County of Honolulu any department or subdivision of	the sale or rental the Corporation ith the United State, or any County of any of them."	ed to execute on behalf of the of the products of the Corpand to execute any bond retes Government or the State of Municipal Government of	ne Corporation or for quired by any e of Hawaii or f said State, or
	IN WITNESS THEREOF, I have	ve hereunto set m	y hand and affixed the cor	porate seal of
said _		this	day of	
20	·			
	Secretary	-		

END OF PROPOSAL

(2) STA, 12+284, S o:\DHHL05-02 Kumuhau & Kakaina Subd\ACAD\KUMUHAU\POST PIAN APPROVAL\DHHL050214A\_C01 pcd1 after plan approval.dwg Last Save by: MSM Last Saved: 5/21/2010 Plotted on: 5/21/2010 CHLINE STA. 9+50 SEE SHEET 14 MATCHLINE STA. 9+50 SEE SHEET 14 MATCHLINE STA. CHARLES TANDE AND B. (KB) STA 12428 19 0/5 19 LT.

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CONSTRUCT STA. 10+38.83 & ROAD "A" (DI) STA. 10+03.13 & ROAD "A" CONSTRUCT C.B. "A13" HSTALL ST. SURVEY NON. TYPE "A" THPE II (12) 39.95 (03) STA, 11+71.55 & ROAD "A"

CONSTRUCT C.B. "AI4"

AD TOPE "A"

TOPE "A"

NV. = 34.13 TOP ... 39.96 NV ... 35.53 574 11+82.05 574 11+82.05 (18") 31.80 (30") 31.80 1/16 BOND 31.4 > (S) \$10. 10+33.83 O/S 6' RT. (S) \$70. 10+33.83 O/S 6' RT. (S) \$70. 10+33.83 O/S 6' RT. (S) \$70. 10+33.33 O/S 6' RT. (S) \$70. 10+33.3 (2) (3) SELVINATION SECON CB. VAIS

TOPE 157.32

BW. - 20.35

SEE DETAIL (14)

SOURCE TO SECON CB. VAIS

TOPE 157.32

BW. - 20.35

SEE DETAIL (14)

FOUNDET V. STA 12+24.63 STA 12+24.63 STA 12+31.78 STA 12+39.89 STA 12+31.78 CONSTRUCT DUH "A"
TOP = 37.06
NV. = 33.80 (18")
NV. = 31.93 (30") STA. 11+82.05 0/S 10.39' LT.

© ROAD "A"

CONSTRUCT DMH "A"

WI)

TOP = 37.55 231.50 DAO 678 STA 11+80.54 STA. 11+84.06 NOTES:

1. ALL WATER PIPE FITTINGS AND ALL

1. ALL WATER PIPE SECTIONS RECURRING
REPRORCED CONCRETE JUCKETING
SHALL BE DUCTLE IRON PIPE CLASS 52. 2 FOR DRIVEWAY ALONG TOP OF (RE) PUTURE DIFFERENT (CO) (PT ) FIA 11-20.5- D/S 1.00 LT.

OMB TOP OF (RE) (PT ONERS) SCALES: 1. (3) ATONO DOO

WELDHOUS CANDINGS

BY EAVEN OF SYNDINGS

BY EAVEN OF SYNDINGS

WELDHOUS CANDINGS

WELDHOUS CANDIN STA 12-24.63 O/S 511' RT.

6 ROAD "A"
CONSTRUCT SAM "B3A"

100 = 37.579

NV. = 31.59 (RIS) CHASS AMEA TES, SEE SHT. 13 STA. 9+97.63 0/S 3.00° LT. § ROAD "A" 1 - 8" 1/18 BEND. STA. 9+87.89 0/S 3.00' £ ROAD "A" 1 - 8" 1/16 BEND, (90) SIA II+22.03 0/5 3.00° LT.

11-) (90) SIA II+22.03 0/5 3.00° LT.

1-6 X 6 TEL 40

1-6 X 15 1-6 X 6 TEL 40

1-6 X 15 1-6 X 6 TEL 40

1-6 X 15 TEL 40

1-7 X BASIN ELEY. 25.00 1/18 BEND, (MS) STA. 11+85.58 p./S 3.00° LT.

(FROM 7.\*

(FROM 7.\*

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(HP = 1002 P.S.L)

(HP = 1002 P.S.L) WIRD SIA 1243/78 D/S 100 11.

BOO 8" WIRD

TO CAP THOPED

1 - B' CAP T FOR 8" WATER, D.L. PIPE E ROAD "A" BEGIN PIPE DEFLECTION COUPLING (MT2) STA, 11+84.08 p/S 3.00' LT.

E ROAD 'A' HE READ M.1 (8 (MI) STA 11+74.00 F. \$ ROAD 'A' 1 - 8" 1/16 BOND, M.J. (B.V.) MIS STA 12+00.84 0/5 3.00" LT. ₹ ROAD A .... STA 11+66.05 0/5 3.00° LT. (\$) (N6) STA. 10+64.96 0/S 3.00" LT. STA. 10+59.06 0/S 3.00 LT. (1) (3) 1 - 8" BOSSED THE, D.I.
TAPPED FOR 3/4" C.C.T.
SEE D.O.W. STID DETAIL V2 1 - 3/4" ARY (APCO)
(W.P. = 101 P.S.I.)
1 - ARY BOX
1 - 8" BOSSED HE, D.I.
1/APPED FOR 3/4" C.C.T.
SEE D.O.W. STD. DETAIL V2 \$78. 10+43.83 0/5 3.00' LT.

\$\frac{0}{4}\text{ROAD} \frac{\gamma^\*}{4}\text{1 - 8" EC.V., QL. 150} \text{150} STA. 10+69.96 O/S 3.00° LT.

ROAD "A"

DEFLECT PIPE (VERT.)

1 - DEFLECTION COUPLING FOR 8" WATER, D.J. PIPE \$1A 10+49.00 0/5 3.00 LT. - 8" 1/16 BEND, M.L (T.V.)
11+74.06 D/S 3.00' LT.
2AD "A" OFFIECTION COUPLING - 8" 1/16 BEND, M.J. (T.V.) IT PIPE (VERT.)
DEFLECTION COUPLING 1/18 BEND, M.J. (B.V.) 1/16 BEND, M.J. (B.V.) MOKET \$22 STA 0+91.89 0/5 5.26'

£ ROAD "B"

CONSTRUCT SAIH "CI"

TOP = 38.76

NV. = 28.70 (ES) EASELENT FOR TIME, ROAD
THEN ALONG THE TIME AT A
THEN ALONG THE TIME T (S) (S) (g) **889** STA 0+40.61 & ROAD "8"
INSTALL ST. SURVEY MON.

STA 2+51.69 & ROAD "8"
INSTALL & MON. 6'x6' EASEMENT IN FAVOR OF U.S. POSTAL SERVICE 1. . 40. 31.3 (1/16 BEND 35.2 (1/16 BEND 322 (m) (2) (m) (1) (m 35.2 OBFLECTION 39.21 (17. 10 71.77 CF 2 GROUND S. ROAD (2) (2) (B) 1/16 BOND XX.6 (E) Ø SS 10 LF. RENF. CONC. MOKET FO B" SEMER PER DPW STD. DET. S B" SEMER PER DPW STD. DET. S B" SEMER PER DPW STD. DET. S BE DETAIL 1 SEE DETAIL 1 SHEET SUPERSEDES SHEET STA 2+02.49 CONSTRUCT SAM "C2"
TOP 3 36.11
NV. = 26.00
NV. = 26.00
FROAD "5"
CONSTRUCT SAM "C3"
TOP = 37.10
NV. = 27.00 PROFILE -5TA. STA 1+28.65 0/5 5.02 E ROAD 'B STA 1+62.06 F.H. CONN. £ 6 SCALES: 1" = 40" (HORIZ.) STA 1+85.12 SH C2 57A. 2+16.78 31.4 ROAD B STA 2+17.24 THE PARTY CONC. MOXET, CON'T. ONEY, CLANTAL PROJECTS DIVISION, MICH. DAD. WASTERNEY BRANCH, DR The state of the s Ξ (H) STAL CHIS 39 0/5 500' RT.

(R) STAL CHIS 39 0/5 500' RT.

(R) STAL CHIS 39 0/5 500' RT.

(R) STAL CHIS 39 0/5 500' RT. ₿ (8) 3) STA 2+92.73 € ROAD TO CONSTRUCT C.B. "83"
TYPE "E"
TOP = 32.55
BMV. = 32.55
BMV. = 27.82 12.55 25.00 (16) EXIST. DETENTION BASIN (FOR DRAHAGE & STORM WATER QUALITY PURPOSES) ELEV. = 25.00 STA. 1+86.93 © ROAD 'B'
CONSTRUCT SPECIAL C.B. 'BZ'
TYPE 'B'
TYPE 'B'
SEE DETAIL 1 ROAD B 큚 (3) SHET JOH OF SH SHETS ALONG DIE 620 STATE OF STA AND SOME CHARGOST OF SEC ROAD PLAN & PROFILE
D "A" - STA. 9+50 TO EN
ROAD "B" DEPARTMENT OF HAWAHAN HOME LANDS (MZ) STA 0+24.45 0/5 5.00' RT.

(ROAD 'B' BEND, M.L. (T.V.)

(MS) 17.5 LT. RENE COME, MACKET
FOR R MINERO DI. PRE

(RADO 'B' ROAD 'B' RT.

(RADO 'B' ROAD 'B' RT. (NT) STA 1+82.06 0/5 5.00' RT KUMUHAU SUBDIVISION STA 0+40.8: 0/5 5.00' RT.

§ ROAD "B"
BEGIN PIPE DEFLECTION
1 -- DEFLECTION COUPLING (m) 16.8 LF. RESM. COMC. MACET (m2) STA. 421.78 0/5 5.00 RT. (m2) STA. 421.78 0/5 5.00 RT. (3) 87 05.94 56.79 68.47

(MB) STA 1+85.12 0/5 5.00' RT.

1 - 8" x 4" REDUCER (We and P.S.)

1 - Mry Box

1 -(MIG) STA, 2+02.49 0/5 5.00' RT. § ROAD, "B" 1 - 8" x 4" REDUCER
STA 1+96,94 0/5 5.00" RT.
£ ROAD "8" F.H. (HT. # 4)

F.H. EXTENSION PROF.

F.H. MANGER

LET, 8" PVC PAPE, QL. 15

- CONC. BLOCKS ASSOCIATES, LTD. UNIONS & ADAPTERS
RED FOR CONNECTION ANT ELBOW. 10 No. #/2 1/2" CD. 2 56 150 ENO